Relationship Between Perceived Learning Gains and Interests on Student-created Video in General Biology 2

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Abstract— Technological application in lesson delivery plays an important role in the learnings of today's youth. Thus, this study was conducted to have a better understanding of the relationship of learning gains as perceived by the learners and their interest through the use of student-created video in the subject General Biology 2 in General Academic Track. Specifically, the researcher intended to measure the level of perceived learning gains and interests on the use of SCV after its utilization, and know if there is significant relationship that would exist between the two variables. This study employed Correlational Quantitative Research Design. The samples were purposively selected and comprised of 24 respondents, of whom were 5 males and 19 females from Gabao National High School in Gabao, Irosin, Sorsogon. Based on the analysis and interpretation of the data, it was found out that learners had shown high interest on the use of SCV. In terms of perceived learning gains, learners generally admitted that they had improved their understanding of the concepts in General Biology 2 after making their own video lessons. On the other hand, the study also revealed that there was a significant and positive relationship between the perceived learning gains and the student interest through the p-value of less than α at 0.05 level and r value of 0.753. This means that the increased level of interest of students towards the subject matter, after video making of Biology concepts, advantageously affected their learnings and their academic performance in general.

Keywords— Student-created Video, Learning Gains, Interests, General Biology.

I. INTRODUCTION

Application of technology in education is a no new set of skills for both teachers and learners in the 21st century as it is highly utilized at this day. In fact, through technology, teaching and learning had become much easier and more enjoyable as stated in the study conducted by Raja [1]. In the old days of many traditional ways of teaching, the teachers did the lessons, and the learners just sat and listened. However, in the technological era, where learners should be the primary doers of learning, teaching has changed into a learner-centered or an outcome-based approach, where an integration of Information and Communications Technology (ICT) is critical in achieving an effective learning result, according to Jean Schreurs [2] which is also supported by the study of Annan, Onodipe and Stehenson [3].

Video, or simply, video presentation, according to Mulwa [4] is one of the many examples of ICT integration which can be utilized in classroom discussion. On the other hand, Annan et al. defined video as "digitally recorded content that has sound and motion that can be stored, delivered live or delayed, and can be streamed to variety of devices". And it is supported in the study presented by Henry Greene [5] wherein student's learning is enhanced through creating content videos to complete learning competencies. Student-created video (SCV), according to Ismail Anas

[6] is an output-based activity which allows learners to share their content knowledge of the assigned topic for class discussion. This also allows learners learn from watching each other's videos [7].

Some studies and written literature based in the Philippines show that video creations by learners were already in wide practice. This claim was supported by a study conducted at Xavier University Junior High School in Cagayan de Oro, in which students created and used videos in the Flipgrid as an interactive application. The learners' feedback and result of the survey recommended its use during synchronous or asynchronous learning [8].

Thus, this study has been chosen by the researchers to get a grip of better understanding the relationship of learning gains as perceived by the learners and their interest through the use of student-created video in the subject General Biology 2, for which no further studies have been conducted. The purpose of this is in order to come up with the course of action plan to help every teacher and learner make a worthwhile classroom activity through ICT integration in the said subject. Another purpose of this endeavor is to recommend ways to make the activity more engaging and interesting based on learners' suggestions and comments. Specifically, this study focused on answering the questions: (i) what is the level of interest of the learners

in General Biology 2 after the utilization of student-created video (SCV)?; (ii) what is the perceived learning gains of the learners in General Biology 2 after the utilization of student-created video (SCV)?; (iii) is there a significant relationship between the perceived learning gains and interest of learners on the use of student-created video?; and (iv) what suggestions may be made to increase learning gains and boost learners' interest through the utilization of student-created video (SCV)?.

In this research study, the student-created video was utilized as a medium of discussion in the synchronous and asynchronous learning during the extended implementation of limited face-to-face classes in the school division of the province of Sorsogon through the fourth quarter of the school year 2021-2022. The teacher in the subject focused on two Most Essential Learning Competencies (MELC) allotted for the said quarter in the span of 6 weeks which started on April 28, 2022. The first MELC, which was about Plant and Animal Organ Systems and Their Functions has been covered within 4 weeks and the other MELC on Feedback Mechanisms has been conversed for 2 weeks. The respondents for this study included 24 learners from the General Academic Strand taking General Biology 2 subject in Senior High School Department of Gabao National High School located in Barangay Gabao, Irosin, Sorsogon.

II. METHODOLOGY

The researchers utilized a correlational research design for this study. This research design is a type of nonexperimental research that facilitates prediction and explanation of the relationship among variables as stated by Seeram [9]. Salient data were obtained through survey by administering survey questionnaires. The survey as instrument was adapted from two related studies: one is from Greene H. in his study on learning through student created, content video; and the other was from the study conducted by Taculod N.J. and Arcilla Jr. F. [10] on enhancing the academic performance and learning interest of Grade 10 students in Biology using expanded Powerpoint Instruction. It was contextualized in accordance with the aim of this study to ensure its appropriateness and usability. And also, it went through a content and construct validation by the experts, specifically those parts that were modified and added by the researchers. Both experts were teachers presently stationed at Gabao National High School- a Master Teacher in Science for 2 years and a Head Teacher in English for 2 years.

For the research sample, the researchers purposively selected the respondents who were taking the subject General Biology 2 belonging to General Academic Strand which was composed of 5 males and 19 females, making the entire sample of 24 respondents.

To gather data, one of the researchers, who happened to be the subject teacher as well, integrated the utilization of ICT in the subject by letting the respondents create their own video presentation or student-created video (SCV) with discussion on the assigned subtopics based on the MELCs (plants and animals reproduction, development, nutrition, gas exchange, transport/ circulation, regulation of the body fluids, chemical and nervous control, immune systems, and sensory and motor mechanisms). The class was divided into groups with 3 members each, and they were given specific topic to discuss. A grading rubric was also provided to the students with specifications about presentation, content organization, accuracy and relevance of the content, accuracy and elements of design and submission of the video. This also served as students' guidelines on the development of their video. The students were given complete creative freedom over the content of their videos, but were only limited to the topics provided. Learners were allowed to use any gadgets such as smartphones, laptops and computer desk. There was no video maker application required to be used. Any resources available that could help them during the development of the video were allowed to be used. All of the conveniences of this task were given in favor of the students.

To keep track of students' progress, researcher/subject teacher in General Biology 2, regularly monitored learners through virtual platforms such as text messaging and online chats, and during the scheduled time of in- person session at the school site. Whenever they encountered difficulties, the researcher provided technical assistance.

To determine the relationship between the perceived learning gains and interests of learners on student-created video in General Biology 2, the researchers computed the mean (Figure 1) and employed Pearson's Product Moment Correlation Coefficient (Figure 2) as a statistical tool. The mean was used to determine the level of perceived learning gains and level of interests by the respondents. First, all the responses made by the respondents using the 5- rating system of the Likert scale were analyzed for their mean in each statement. Each statement was given descriptive interpretation using the table of survey result interpretation. All of the calculated mean were averaged in order to get the weighted mean which consequently served as the reference in describing the level of perceived learning gains and level of interests. Meanwhile, Pearson Correlation was

employed to describe the degree of correlation and the direction of the two variables involved [11] namely interest and perceived learning gains. The paired score analyzed using this treatment were the mean scores of each student of their responses on interest and perceived learning gains. An online Pearson correlation calculator was utilized in order to get r and p- value. Moreover, this treatment made use of 5% level of significance.

$$Mean = \frac{Sum\ of\ all\ data\ values}{Number\ of\ data\ values}$$

Symbolically,

$$\bar{X} = \frac{\Sigma x}{n}$$

where $\bar{X}$ (read as 'x bar') is the mean of the set of x values.
Σx is the sum of all the x values, and
n is the number of x values.

Figure 1: Mean formula

Pearson Product Moment of Correlation

$$r = \frac{\Sigma(xi-\bar{x})(yi-\bar{y})}{\sqrt{\Sigma(xi-\bar{x})^2\Sigma(yi-\bar{y})^2}}$$

where r is the correlation coefficient,
xi is the values of the x- variables in a sample
$\bar{x}$ is the mean of the vales of the x- variable,
yi is the values of the y- variable in a sample, and
$\bar{y}$ is the mean of the values of the y- variable.

Figure 2: Pearson- Product Moment of Correlation Formula

III. RESULTS AND DISCUSSION

1. Level of Perceived Learning Gains

In order to give meaning measured level of interest of the students and perceived learning gains, weighted mean of the data was calculated. The table for Survey Result Interpretation was also used to give verbal or descriptive interpretation of the mean data derived.

Table 1: Survey Result Interpretation

Options	Scale Rating A	Interpretation	Adjectival Rating
1	1.00-1.80	Very low interest	Strongly Disagree (SD)
2	1.81-2.60	low interest	Disagree (D)
3	2.61-3.40	Undecided	Neither Agree nor Disagree (N)
4	3.41-4.20	High Interest	Agree (A)
5	4.21-5.00	Very high Interest	Strongly Agree (SA)

For perceived learning gains, the attained weighted mean is 3.8, which corresponds to "Agree". This tells generally that most of the participants confessed that through video making, it helped them improved their learning gain in the General Biology 2 subject. The data also showed that students responded positively to misconception correction in their subject in Biology. Likewise, similar responses were expressed that autonomous learning through video creation has comparable learning gains to teacher- aided instruction. On the other hand, among the 7 experiences, one of them stands out with highest positive response garnering a weighted mean of 4.3 which can be interpreted as "Strongly Agree". Respondents admitted that they gained a fundamental understanding of some biology topics, which will be useful in their future advanced biology classes in college.

Table 2: Weighted Mean for Perceived Learning Gains

No.		Mean	Interpretation
	Perceived Learning Gains		
1.	It enriches my knowledge of the subject content.	4.0	Agree
2.	It helps me develop the skills stated in the Most Essential Learning Competencies.	4.0	Agree
3.	I feel more confident now on involving myself in peer discussions about the subject matter after I prepared a presentation in Audio- Visual Format.	3.8	Agree
4.	I have developed my fundamental understandings in some topics in Biology which is essential for my future advance Biology subjects in college.	4.3	Strongly Agree
5.	Some misconceptions emerged prior to video production are consequently corrected and further clarified to me.	3.7	Agree
6.	I believe that my learning gains after going through video creation of topics in Biology greatly affected my improved performance in this subject- as manifested in the results of my summative test.	3.5	Agree
7.	I can compare my learning gains from video creation activity to teacher- aided instruction.	3.6	Agree
	Total	3.8	Agree

2. Level of Interest

The overall weighted mean under the category of interest was 4.0 which can be interpreted as Agree. This implies that student who performed the task of SCV showed high interest to it. Specifically, 92 % out of the 13 statements for interest category showed high interest towards SCV. Item 9 which expressed interest for more similar learning task of creating videos in Biology subject were interpreted with very high interest.

Table 3: Weighted Mean for Interest

No.		Mean	Interpretation
Interest			
1.	Video production makes learning enjoyable.	4.0	Agree
2.	I do enjoy my Biology Class.	3.8	Agree
3.	Video production is very exciting.	4.2	Agree
4.	Video production interest me to learn.	4.0	Agree
5.	Video production stimulates my learning.	3.8	Agree
6.	I got more enthusiastic towards Biology subject after I went through video production.	4.0	Agree
7.	I am motivated to participate even more in performing other learning tasks in my Biology subject.	3.8	Agree
8.	I was motivated to participate even more in creating videos in my Biology subject.	3.8	Agree
9.	I look forward to have more video production as part of learnings task in Biology subject.	4.4	Strongly Agree
10.	It encourages me to cooperate with my classmates in creating the video.	3.7	Agree
11.	I prefer video production of the contents in Biology as my learning style than using Learning Modules.	4.1	Agree
12.	Video production makes Modular Distance Learning more engaging in the learning process.	4.0	Agree
13.	I want video production be part of the learning tasks even during full implementation of face-to-face learning modality.	4.0	Agree
	Total	4.0	Agree

Table 3: Relationship of Interest and perceived learning gains

Coefficient(r):	N	T Statistics	P Value
0.753	24	5.382	0.00002

The table shows the results for describing the correlation of interest and perceived learning gains. The r value of 0.753 implied a high positive correlation. This means that interest and perceived learning gains are directly proportional to one another.

Meanwhile, p value is less than α at 0.05 level. This can be interpreted as having a significant relationship between the two variables being correlated.

IV. CONCLUSION

It was found out in this study, as gleaned from the table indicators that making and utilizing student-created videos increased the level of interest of the students based on the result interpreted as with "high interest" towards the SCV.

It also provided more perceived learning gains in the subject matter which was also interpreted as "agree" to the creation and utilization of SCV.

This study also found out a high significant relationship between student interests and perceived learning gains through the use of student-created videos because of the result, which shows a highly positive correlation, which only means that students really learn while having fun. Based on the respondents' suggestions utilizing this kind of learning strategy was really a great help in boosting their interest and academic performance.

V. RECOMMENDATIONS

Based on the conclusion, the teacher should include this kind of learning strategy as an instructional design element, not just a part of the learning task stated in the MELCs. Furthermore, teachers must also guide students how to use and apply technologies for future learning and need to train the learners how to effectively engage with the technology utilized as a medium of content delivery.

Moreover, teachers should conduct proper trainings for students to enhance their knowledge and skills on making and utilizing student-created videos and can use the developed action plan as the basis of the activity. And in addition, more studies may be conducted to supplement the result and findings of this present study.
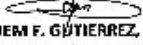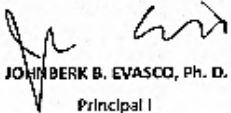
APPENDIX

Republic of the Philippines
Department of Education
Region V
Schools Division of Sorsogon
GABAO NATIONAL HIGH SCHOOL
Gabao, Irosin, Sorsogon
S.Y 2022-2023

ACTION PLAN

KEY AREA	PROJECT	OBJECTIVE/S	ACTIVITIES	DATE OF IMPLEMENTATION	PERSONS INVOLVED	BUDGET/ SOURCE OF FUND	EXPECTED OUTCOME
Learners Development Staff Development	School-based Training for Grade 12 Learners on How to Develop a Student-created Video	1. Disseminate information, knowledge and skills to be collectively shared by the speaker. 2. Update students with the new trends in creating video presentations. 3. Create/make a student-created video sample.	Preliminaries/ orientation on the activity. Discussion of the topics by the assigned Speakers Trainings/Workshops Closing Program Distribution of Certificates	December 2022	Grade 12 Learners SHS Teachers School Head Personnel Development Chairman Student Affairs Coordinator Curriculum Development Committee Project Proponent	Personal Fund -	Students and teachers as participants would be able to adapt new trends in the educational application of technology through the utilization of student-created videos. Teachers would be able to teach and assist learners in making a student-created video as part of the teaching-learning process.

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